JMPS Program Overview

Mission Planning SEIC Industry Day

16 Dec 02

CDR Ed Bellini, USN

JMPE Framework + Service Unique Components + Hardware

JMPE Framework

- Route Editors
- Weather Tools
- Auto Routing

USN

USMC

- Generic UPC
- Generic Server
- Comm
- Security

- Session Management
- Configuration Management
- Constraint Checking
- Data Structures

- Single Window Planning
- Standard Viewers
- Mission Folder

- Takeoff & Landing
- Mission Rehearsal

- Threat Analysis
- Forms Generation

USAF

SOF

- Weapons Planning
- FPMs
- Collaboration

DII COE / JTA Compliant Windows NT Core

- Digital Mapping
- System Admin
- Others...

- Windows NT
- COTS

JMPS Builds Multi-User Common Components for Mission Planning on top of Common DII COE Services.

Platforms/Weapons "Add-On" their own UNIQUE Tools

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Joint Mission Planning Systems

THE JMPS DEPOT

Data Feed

ATO/ACO

Imagery

Intel

NRT **Schedule**

Wx

OB

- B-2
- F-15 (Boeing)
- **Unique Planning Components**

- Autorouter
- CWDS (Tybrin)
- PGMPS (PRB)
- **Special Common Capabilities**

- JMPS V2
- JMPS V1 (NGIT)
- **Framework**

- JC1 (NGIT)
- JCP

- Windows XP .NET
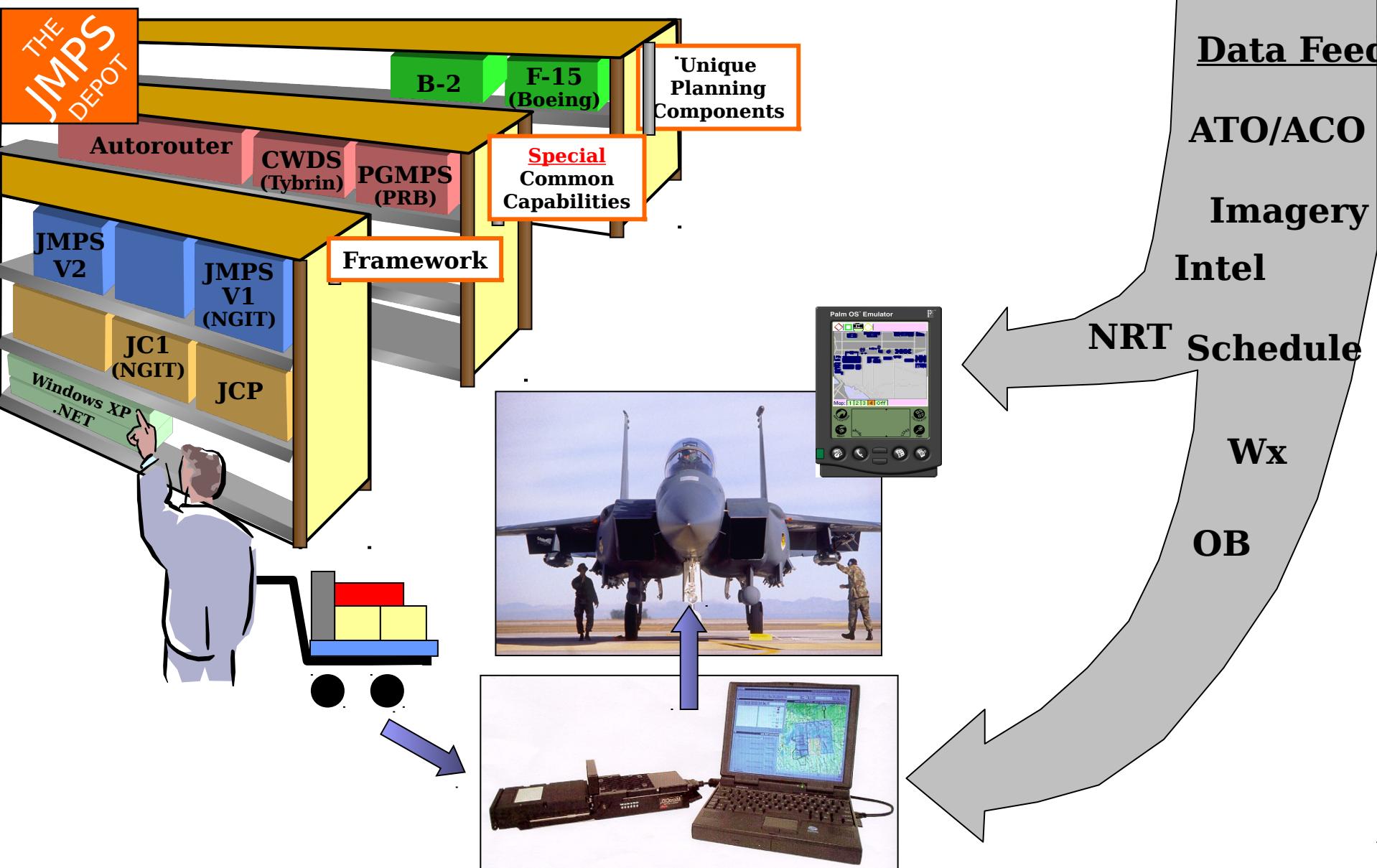
A Mission Planning Environment
From a Platform Perspective…

F/A-18 JMPS MPE
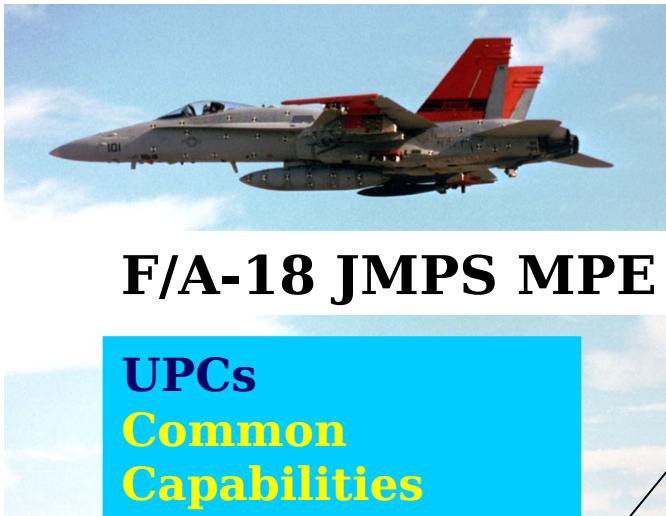
UPCs
Common
Capabilities
Framework

PMA-201

PMA-233
Hill AFB

PMA-233
NGIT

F/A-18 UPC
SLAM
HARM
Strike Plan Folders
TAMMAC
ARC-210
NAWC
JSOW/JDAM
GPS Prediction
PET
GPS Crypto Key
GCCS-M Ext.
JTIDS Init
Route Linking
CV Server
PTW
GPS Almanac
Combat 1
Version 1

PMA-265
Boeing

PMA-258
Boeing

PMA-242

PMA-281

PMA-209
Raytheon

PMA-233
DCS, PRB

PMA-233
Tybrin

Sharing Common Software

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JMPS Overview

Unique Planning Components	Fighter UPCs	Bomber UPCs	TASM UPCs	ISR UPCs

JMPS Common Capabilities

PGMPS	CWDS	Mission Rehearsal	Sensor Predictions	Collaborative Planning	Refueling
Weapons Effectiveness Tool	Access Target Information	Weather Planning	Vertical Profile	Query Imagery	Customized MPE
GATM	Airdrop	System Security	Web Browsing	Sensor Employment Planning	Political/Diplomatic Considerations
Autorouting (JALC)	Strategic Planning	EW Planning			

JMPS Combat One

Strike

Crypto Key	JTIDS	Planning Folder	GPS Predictions	Server Walkaway
Route Linking	Mission Binder	Water Pages	PTW Imagery Interface	Weather Data Feed

JMPS Version 1

Basic Mission Planning

Route Editor	Archive Mission Data	Mission Tasking and Parsing Process	Basic Threat Analysis
Route Construction	Database Admin	Mission Data Load	Weather
Navigation Aid	Flight Planning Time/Dist/Fuel	Generate Mission Materials	Terrain Planning

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JMPS Benefits

- **Interoperability/Collaboration** - Gulf & Kosovo CAOCs #1 Need
- **Reduced mission plan time** - Concurrent aircraft/weapon planning
  - System usable for Real Time Targeting, Mobile Target Planning
- **Improved Precision Engagement** - Integrates new smart weapons
- **EAF Mobility** - Reduced footprint - Reduced Training Time/Costs
- **Open Architecture** - Future capabilities integrated by developers
- **Reduced life cycle costs** - Single platform - Multi-service funding
- **COE** and **GATM** compliance
- ORDs Call for a **PC-Based** Planner

Force Level Planning

Strike Planning

Coordinated Aircraft & Weapon Planning

Support Planning

Assault Planning

...S will be the Single Mission Planning Solution for Warfigh...

Commonality
Mission Planning Environment (MPE)

Collaborative Planning

Mission Rehearsal

PGM Planner

GATM

Auto Router

Low Observable

ARC210 / JTIDs

Moving Map

Aerial Refueling

Combat 1

Version 1

26 Common Capabilities

F-16 JMPS MPE

F-16 UPC
JASSM Autorouter
Collaborative
Mission Rehearsal
PGM Planner Ext
NIMA DOV
Combat I
Version I

F/A-18 JMPS MPE

F-18 UPC
JASSM Autorouter
Collaborative
Mission Rehearsal
Planning
PGM Planner
ARC-210
GPS Prediction
Combat I
Version I
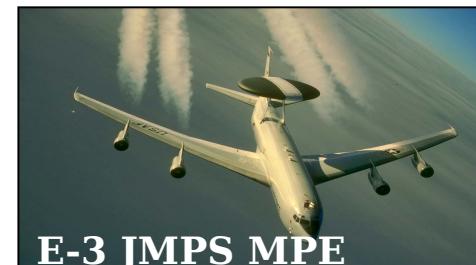
E-3 JMPS MPE

E-3 UPC
Collaborative
Mission Rehearsal
Planning
GATM
Aerial Refueling
Version I

Each Aircraft Will Have Unique Configuration

Nominal Data

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JMPS Platform Migration

Old "Stovepiped" Method Existing Common Method New Common Method

MPS/TAMPS

Bars (left to right):
- B-2 A/W/E – Boeing, Wichita
- F-16 A/W/E – LM/DFW & OOALC-TI
- F-22 A/W/E – BAE, Nashua
- F-15 A/W/E – Boeing, St Louis
- F-14 MPM – Pt. Magu
- F/A-18 MPM Boeing, St. Louis
- B-1 – Logicon, San Pedro
- F-117A – BAE, San Diego

Core System
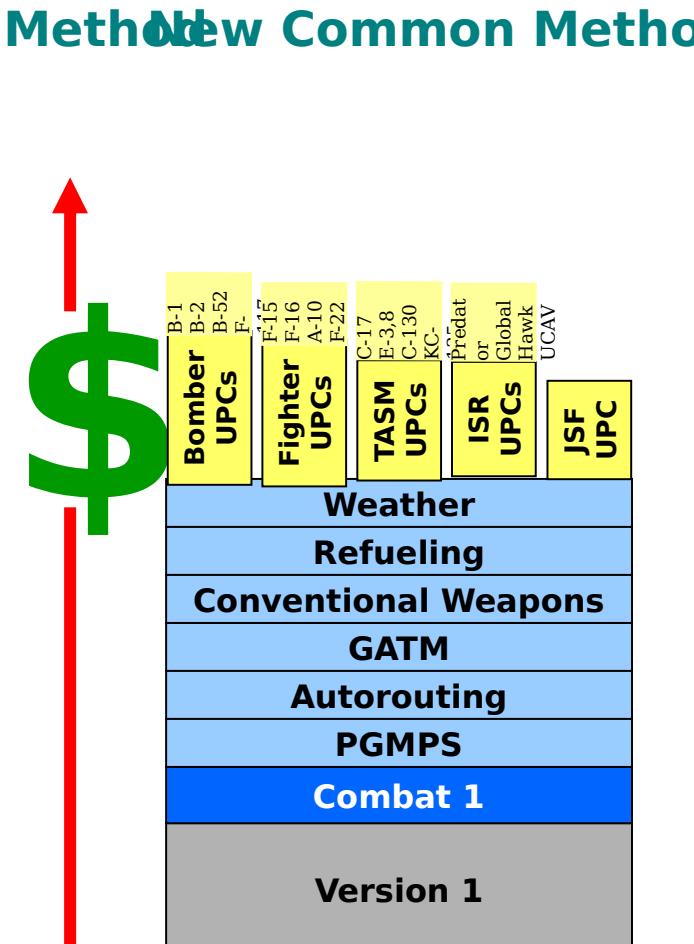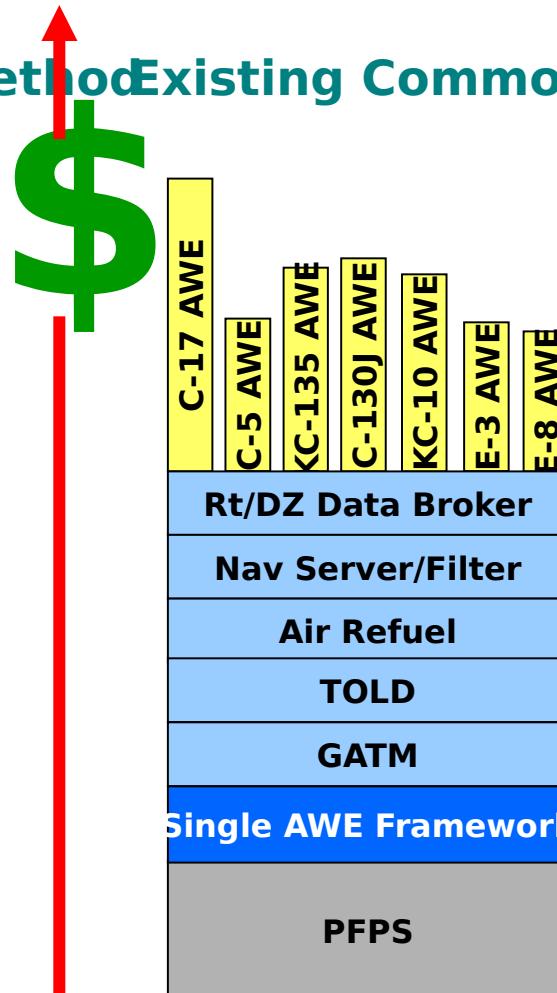
TASM "Success Story" Today

Bars: C-17 AWE, C-5 AWE, KC-135 AWE, C-130J AWE, KC-10 AWE, E-3 AWE, E-8 AWE

| Rt/DZ Data Broker |
| Nav Server/Filter |
| Air Refuel |
| TOLD |
| GATM |
| Single AWE Framework |
| PFPS |

JMPS

Bars: Bomber UPCs (B-1, B-2, B-52), Fighter UPCs (F-, F-15, F-16, A-10, F-22), TASM UPCs (C-17, E-3,8, C-130, KC-), ISR UPCs (Predator, Global Hawk, UCAV), JSF UPC

| Weather |
| Refueling |
| Conventional Weapons |
| GATM |
| Autorouting |
| PGMPS |
| Combat 1 |
| Version 1 |

Build Once and Share

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JMPS Master Schedule
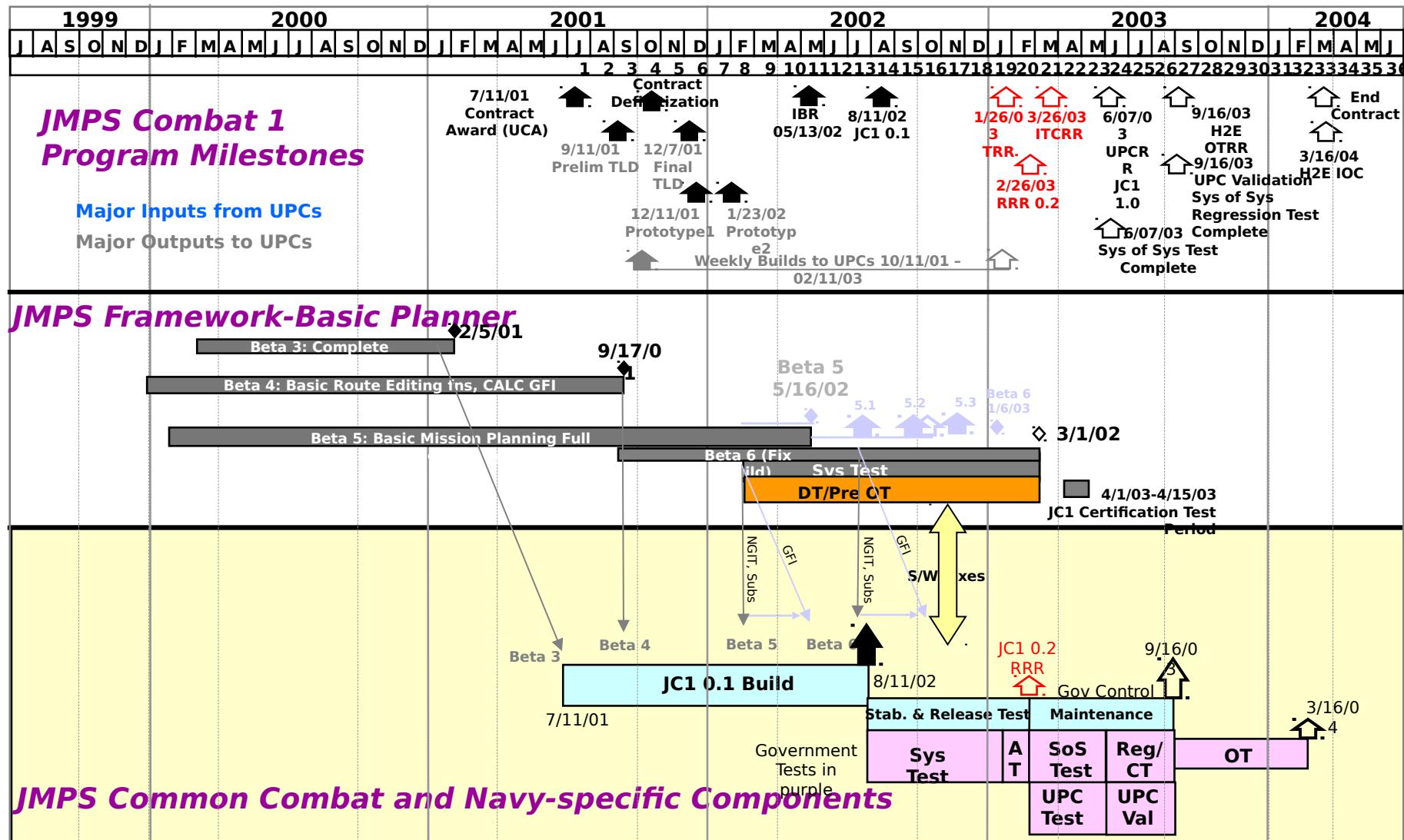
Common Capabilities Schedule

ID	Task Name	2002				2003				2004				2005				2006				2007				2008		
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
26	**COMMON CAPABILITIES**																											
27	**PGMPS (J,J,W,A)**									3/18																		
44	**PGMPS (SDB Phase II)**										2/15																	
48	**CWDS**									2/27																		
52	**Weapons Effectiveness Tool**									2/27																		
56	**Access Target Information**										5/31																	
60	**GATM**											6/25																
64	**Airdrop**										5/27																	
68	**Autorouting**													11/29														
72	**Strategic Planning**															6/1												
76	**Mission Rehearsal**											12/27																
80	**Sensor Predictions**												9/23															
84	**Weather Planning**												9/23															
88	**Vertical Profile**									5/27																		
92	**System Security**																	8/25										
96	**Web Browsing**													10/23														
100	**EW Planning**										4/26																	
104	**Collaborative Planning**																7/1											
108	**Query Imagery**															6/1												
112	**Sensor Employment Plng**																			1/22								
116	**Refueling**																7/1											
120	**Customized MPE**														1/27													
124	**Political/Diplomatic Considerations**															3/28												

NOTIONAL SCHEDULE

🟦 **Development**

🟨 **Test**

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Air Force UPC Schedule
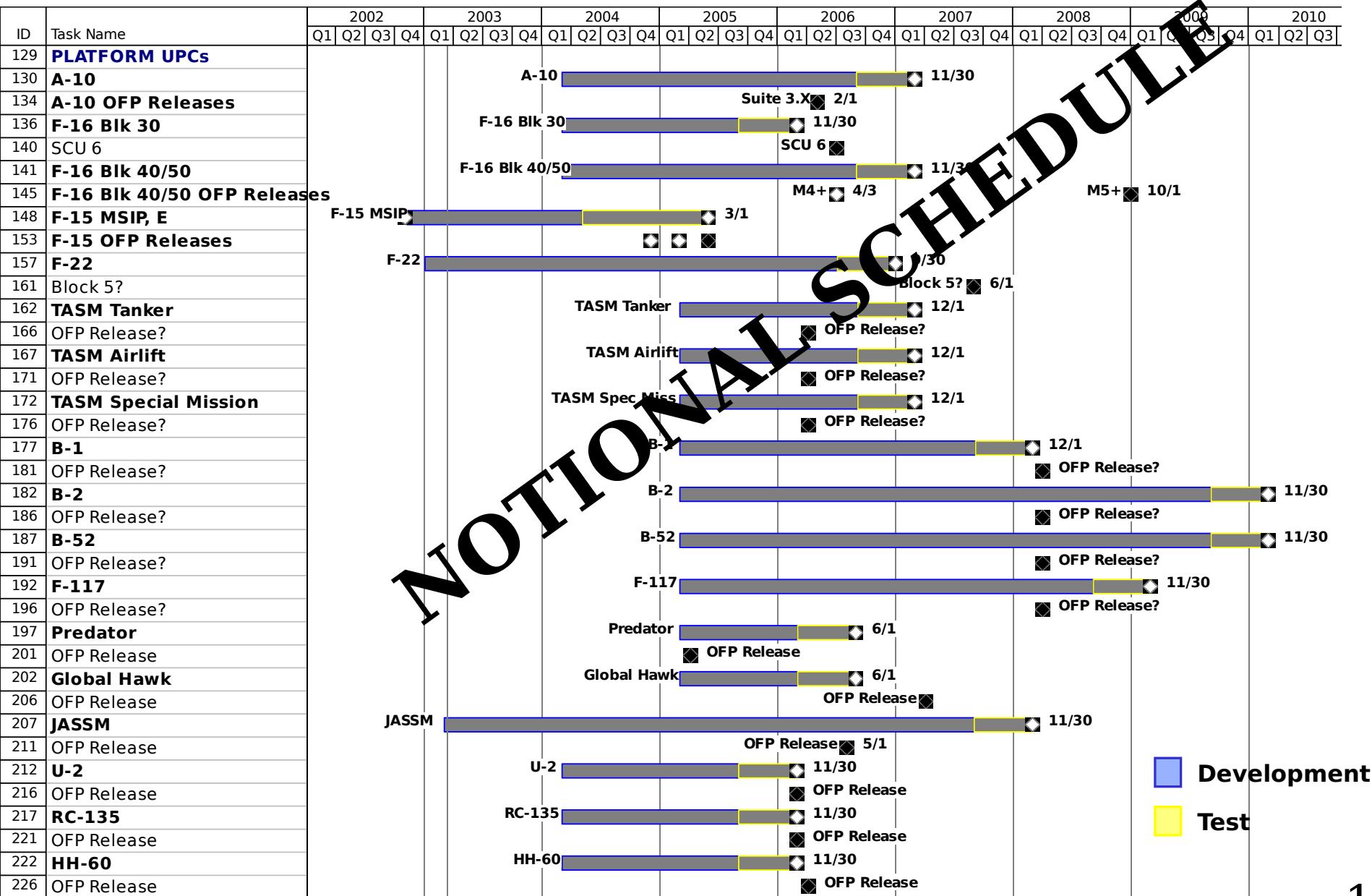
JMPS Contractual Timeline

FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09

JMPS Version 1

JMPS Combat 1

Navy UPCs

SE&I Contract

Component Development Contract

30+ Common Capabilities

30+ Unique Planning Components (UPCs)
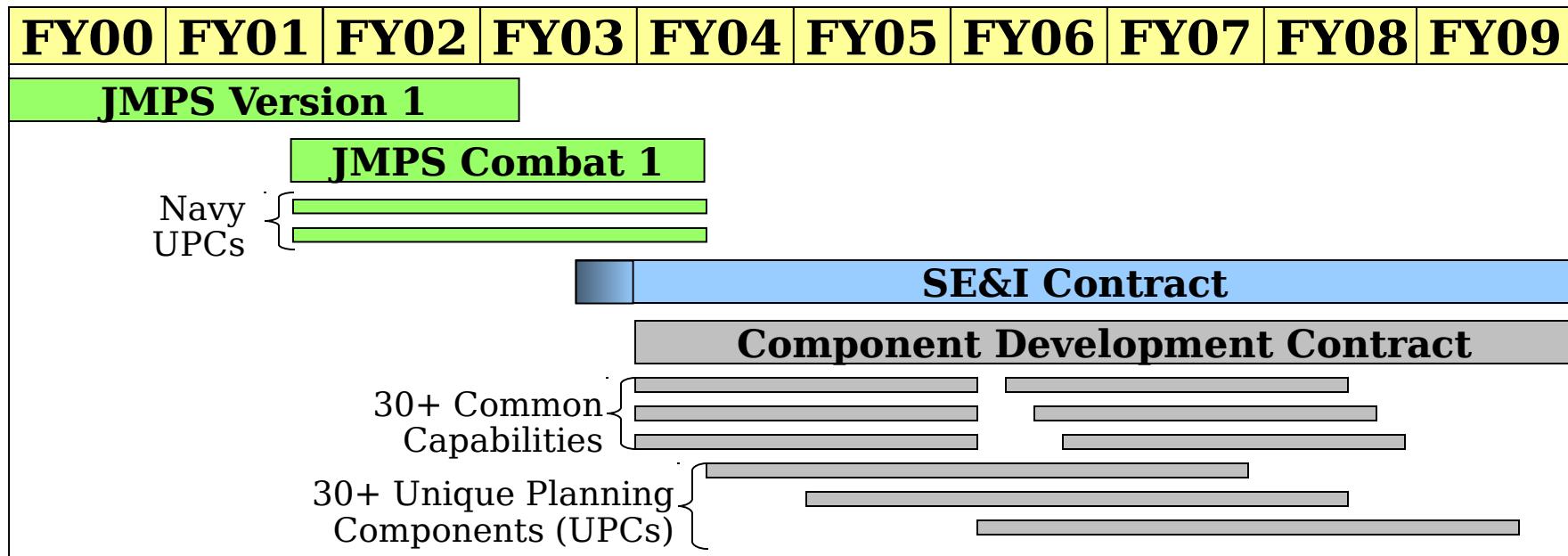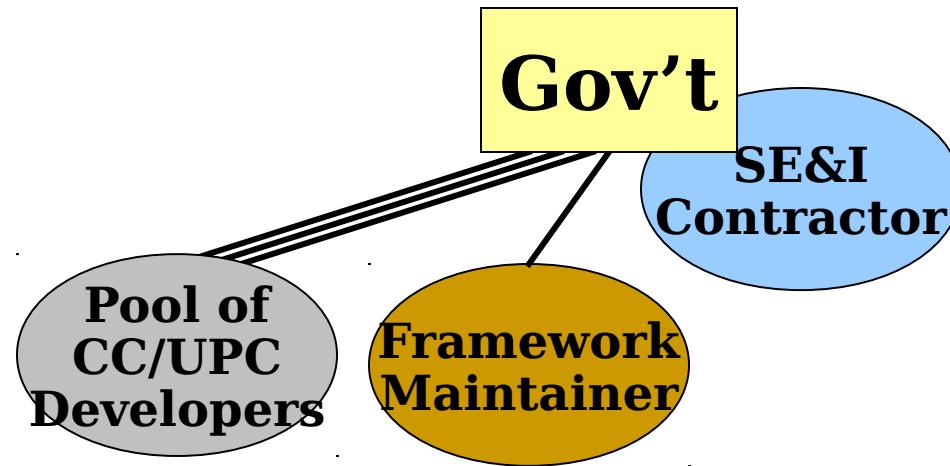
JMPS Business Rules

- No restricted rights code - GPLR for code
- Licensing software not preferred
- Minimum SEI CMM Level 3 (or equivalent)
- Mission planning domain knowledge
- ACA with JMPS Integrator and Framework Maintainer
- Complete interface documentation (ICDs and IDDs)
- Periodic source and executable code release deliveries
- Programmer's Guide delivered
- Open design reviews (other JMPS developers may attend)
- Cost Performance (EVMS) data provided

These Rules Apply For All Future JMPS Developers

JMPS Technical Rules

- Design for extensibility
- DII COE Level 6 compliant
- Meet JMPS Security Target requirements
- Adhere to JMPS architectural standards
  - JMPS Object Model, COE USI Standards, Data Models, JMPS Interfaces
- Component design standards
  - Microsoft COM components
  - Interface Design Language (IDL) with semantics
  - Coding and Commenting standards
- Access to developer's problem database
- Comply with DoD directives
  - Use XML, Standardize Internet Protocol interfaces

These Rules Apply For All Future JMPS Developers

Summary

- JMPS Framework developed
- JMPS will be fielded:
  - Mar 04: Navy (F/A-18, F-14, E-2C)
  - Mar 05: Air Force (F-15)
  - 2005: Army, SOF
- Future JMPS developments in excess of $1B
  - Framework Evolution
  - Common Capabilities
  - Platform UPCs

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Prestrike

Post-strike
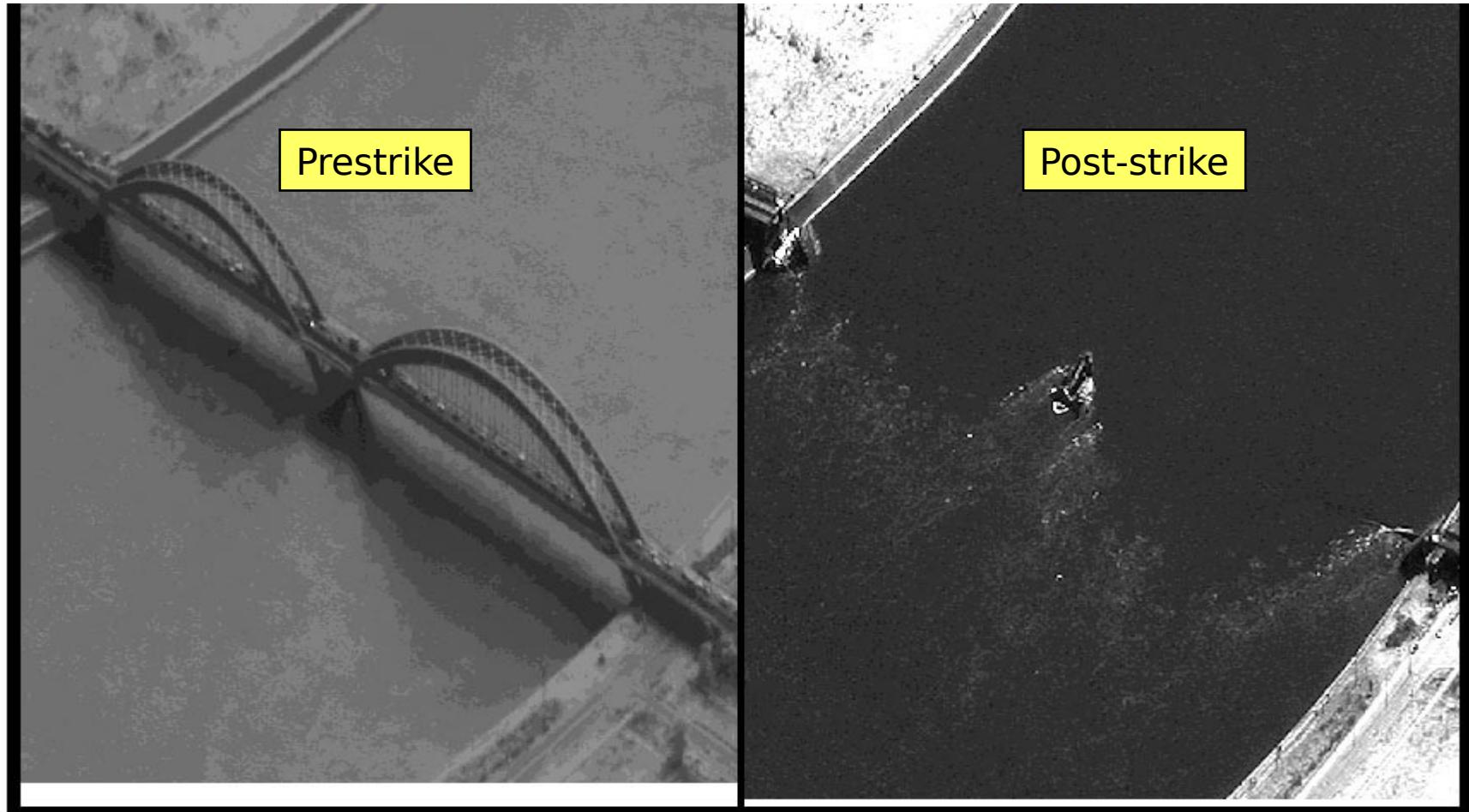
Questions ?

JMPS Points of Contact

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- **JMPS Website info:**
  NavMPS Web site
  – http://mps.chinalake.navy.mil

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BACKUP SLIDES

Platform Migration

Version 1

Combat 1

PGM Planning

Conventional Wpns

GATM

Airdrop Planner

Auto Router

Weather

Once the Framework, Common Capabilities, and Platform UPC are built, the platform will migrate to JMPS

F-16 UPC
PGM Planner
Convent Wpns
Combat 1
Version 1

B-2 UPC
PGM Planner
Auto Router
Weather
Combat 1
Version 1

Notional Data

F-16 MPE

NAVY MPE

B-2 MPE